WILLIAM SYMINGTON

KITSAP County

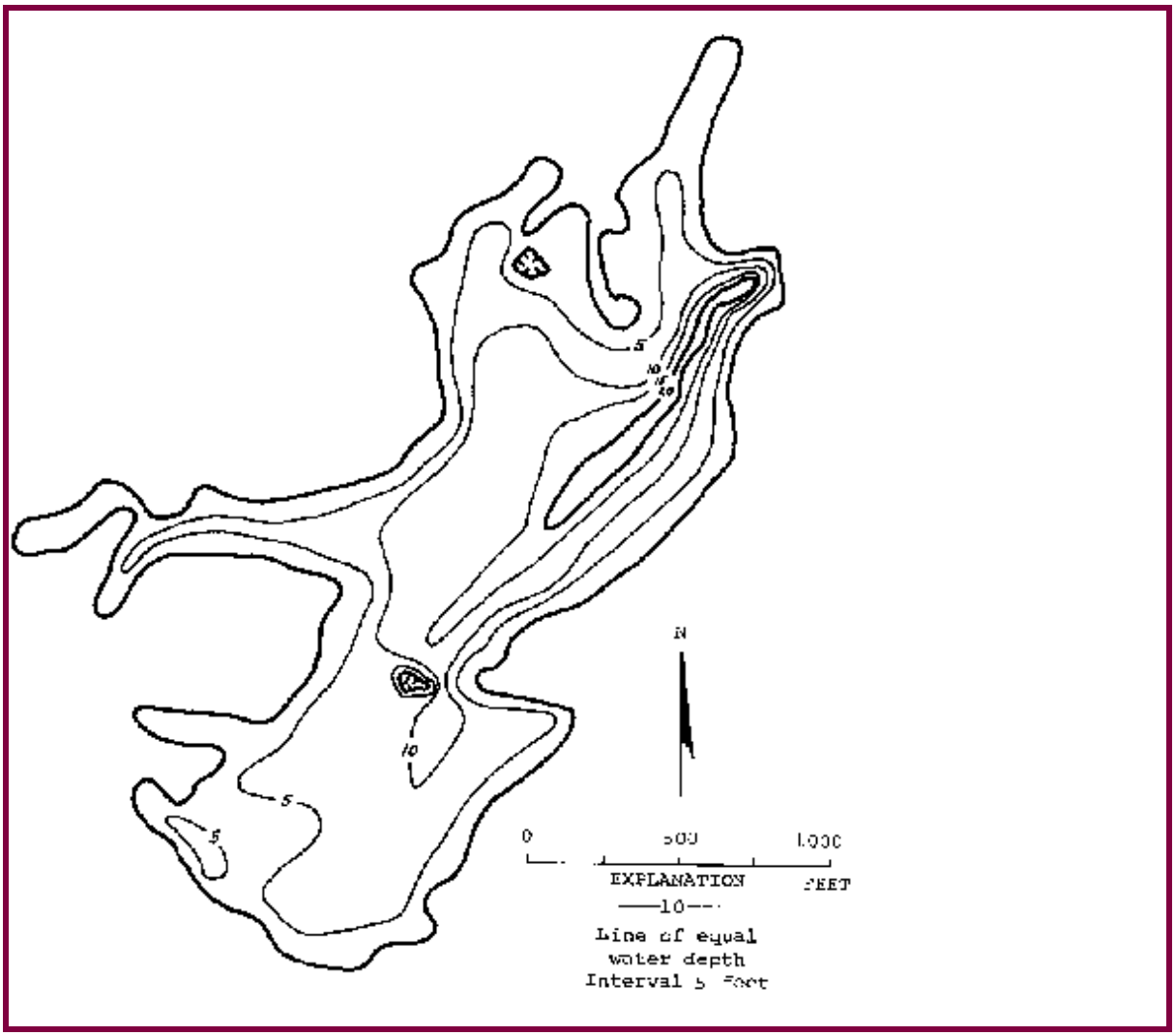
Lake ID: *SYMKI1*

Ecoregion: 2

William Symington Reservoir is a shallow lake located along the Big Beef Creek. Two private parks line its shores. The lake has abundant aquatic life including geese and lush aquatic macrophytes.

Area (acres)	*Maximum Depth (ft)*	*Mean Depth (ft)*	*Drainage (sq mi)*
60	23	7	7

Volume (ac-ft)	*Shoreline (miles)*	*Altitude (ft abv msl)*	*Latitude*	*Longitude*
422	2.74	390	47 35 56.	122 49 27.



Station Information

SYMKI1

Secondary Station	Station # 1	latitude: 42 35 44.6	longitude: 122 49 46.0
	Description:	In deep part of lake approxiamtely midway on a line extending from southern island to northeast corner of deepest cove of lake	
Primary Station	Station # 2	latitude: 47 35 48.2	longitude: 122 49 41.2
	Description:	Directly south of eastern shore of southern island on a line extending from two coves located directly east-west from one another	

Trophic State Assessment for 1998

WILLIAM SYMINGTON

Analyst: KIRK SMITH

TSI_Secchi:	43	N
TSI_Phos:	39	
TSI_Chl:	45	
Narrative TSI:[a]	M	

William Symington Lake (Symington Lake) is a man-made reservoir in Kitsap County. The shoreline is approximately 50% developed (mostly residential) with timberland outside of the residential area. There is no public access. The lake is relatively shallow with numerous aquatic plants throughout. Waters are tannin-colored. There is a restriction on the use of outboard motors and the most prominent primary use of the lake is swimming at the two private beaches along the shoreline. It did not appear that boating of any kind was a significant form of recreation and, to survey respondents, watercraft restriction was the most desired characteristic of the lake. Having a public access and public beach were the least desired characteristics. The natural scenery is also a highly desired characteristic and the habitat survey did show very little human disturbance along the shoreline, lawns being an exception. The habitat survey confirmed the abundance of aquatic weed cover. The user survey also indicated that aquatic plants detracted from the enjoyment of the lake. Phosphorus concentrations were moderate (mean 11.3 ug/L total phosphorus).

It appears beneficial uses are supported on Symington Lake with the exception that swimming may be impaired by the abundant aquatic plant life and localized high fecal bacteria counts. Because swimming is an important characteristic, we suggest that homeowners groups (rather than local public entities because there is no public access) develop strategies to control the growth of aquatic vegetation and manage fecal bacteria sources (probably swimmers). We recommend a nutrient criterion for William Symington Lake be set at the ecoregion action value for lower mesotrophic Puget Lowland lakes, 20 ug/L.

[a] E=eutrophic, ME=mesoeutrophic, M=mesotrophic, OM=oligomesotrophic, O=oligotrophic

Chemistry Data

WILLIAM SYMINGTON

Date	Time	Strata	Tot P (ug/L)	Tot N (mg/L)	TN:TP	Chloro-phyll (ug/L)	Fecal Col. Bacteria (#/100mL)	Hardness (mg/L)	Calcium (ug/L)	Turbidity (NTU)

Station 0									
6/9/1998	L					5			
	L					14			
7/28/1998	L					19 J			
	L					200 J			
8/17/1998	L					180			
	L					29			
9/21/1998	L					7			
	L					9			
Station 1									
6/9/1998	E	12.8	.244	19					
Station 2									
6/9/1998	E	11.7	.254	22	1.4		28.4	7100	1.2
7/28/1998	E	11.4	.244	21	2.3				1.2
	H	20.5	.291	14					
8/17/1998	E	12.2	.29	24	10.8				2
9/21/1998	E	9.9	.348	35	9				1.8

Strata: L=lake surface, E=epilimnion, H=hypolimnion; Qualifier: J=Estimate, U=Less than

Watershed Survey

WILLIAM SYMINGTON

Survey Date: 9/21/1998

Land Uses (1 = Primary, 2 = Secondary, etc.)

- [4] **Agriculture(commercial, not hobby)**
- [ ] **Commercial, Industrial**
- [3] **Major transportation**
- [1] **Residential**
- [2] **Park, forest or natural**

Impervious surfaces (Roads and parking area): No Curbs

Observations (check mark denotes presence)

BMP's ☑

Natural vegetation left around the shoreline

Odors ☐

Cattle ☐ **Ducks** ☐ **Geese** ☐

Fertilizers and weed killers appear to be used in residential or agriculture area ☐

Buffer zones around streams and wetlands ☐

Irrigation ☐

Habitat Survey Summary Report

WILLIAM SYMINGTON

Data are averages of ***10*** **Stations Surveyed** **Date of Visit:** 9/16/1998

Vegetation Type (Avg. only of sites w/ vegetation present; 1=coniferous, 3=deciduous)

Canopy Layer Avg:	2.5	**Number of stations with canopy:**	10
Understory Avg:	2.9	**Number of stations with understory:**	10

Percent Areal Coverage (0 = absent, 1 = <10%, 2 = 10-40%, 3 = 40-75%, 4 = >75%)

Canopy Layer:	**trees > 0.3 m DBH**	2.1
	trees< 0.3 m DBH	2.4
Understory:	**woody shrubs saplings**	2.6
	tall herbs, forbs grasses	1.7
Ground Cover:	**woody shrubs seedlings**	1.6
	herbs, forbs, grasses	3.2
	standing water or inundated veg	0.9
	barren or buildings	0.7
Substrate Type (within shoreline plot):	**bedrock**	0.0
	boulders	0.0
	cobble/gravel	0.6
	loose sand	0.0
	other fine soil/sediment	1.2
	vegetated	3.6
	other	0.2
Bank Features:	**angle (O:<30; 1: 30-75; 2:nr vertical)**	0.5
	vertical dist (M from wtrln to high wt):	0.3
	horiz. dist. (M from wtrln to high wt):	0.5

Human Influence (0 = absent, 1 = adjacent to or behind plot, 2 = present within plot)

buildings	1.2
commercial	0.0
park facilities	0.1
docks/boats	0.0
walls, dikes, or revetments	0.6
litter, trash dump, or landfill	0.0
roads or railroad	0.0
row crops	0.0

pasture or hayfield	0.0
orchard	0.0
lawn	1.4
other	0.0

Physical Habitat Characteristics

station depth (at 10 m from shore)	1.2

Bottom Substrate (0 = absent, 1 = <10%, 2 = 10-40%, 3 = 40-75%, 4 = >75%)

bedrock	0.0
boulders	0.0
cobble	0.0
gravel	0.3
sand	1.2
silt	3.2
woody debris	0.3

Macrophyte Areal Coverage (0 = absent, 1 = <10%, 2 = 10-40%, 3 = 40-75%, 4 = >75%)

submergent	2.7
emergent	1.0
floating	1.4
total weed cover	3.0
Do macrophytes extend lakeward (-1 = yes, 0 = no)	-1.0

Fish Cover (0 = absent, 1 = Present but sparse, 2 = moderate to heavy)

aquatic weeds	2.0
snags	0.0
brush or woody debris	0.1
inundated live trees	0.0
overhanging vegetation	0.9
rock ledges or sharp dropoffs	0.1
boulders	0.0
human structures	0.1

Questionnaire

WILLIAM SYMINGTON

Results compiled from 5 **Surveys.** **Average time (years) respondents spent on lake:** 9.00

Did the following add (+1), detract (-1), or have no effect (0) on your enjoyment of the lake today?

Types of WaterCraft:	0.2	View:	0.8	Distance to Lake:	0.2
Public Access:	0.3	Swim Beach:	0.6	Canada Geese:	-0.2
Water Clarity:	0.2	Water Qual. for Swim:	0.2		
Fishing Quality:	0.4	Aquatic Plants:	-0.4		

On a scale of 1 (poor) to 5 (excellent), how would you rate water quality today? **2.8**

Which would you rather have, 1 or 2?

1) Better fishing and more natural habitat, or 2) clearer water?	1.6
1) Better fishing and more natural habitat, or 2) fewer aquatic plants?	1.6
1) Clearer water, or 2) fewer aquatic plants?	1.4

How important is each of the following characteristics to you (1 = very undesirable, 5= very desirable):

Restricted Watercraft:	4.4	Good Warmwtr Fishing:	3.0	Natural Scenery:	4.2
Plant Growth:	2.0	Good Swimming:	4.2	Public Beach:	1.4
Natural Shoreline:	3.0	Less Algae:	3.2	Canada Geese:	3.2
No Odors:	4.0	Public Access:	1.6		
Good Coldwtr Fishing:	3.6	Clear Water:	4.2		

Tabulated Results

Survey ID	Date	Residency		Rent or Own	Primary Activity*	Water Clarity: Purchase Factor?	Water Clarity: Has it Changed?	Water Clarity: When?
43	8/20/1998	Resident	Permanent	Rent	10	☑	No	
61	8/16/1998	Resident	Permanent	Rent	1	☐	No	
63	8/25/1998	Resident	Permanent	Rent	6	☑	Worse	1996
72	8/15/1998	Resident	Permanent	Rent	7	☐	Unknown	
86	8/20/1998	Resident	Permanent	Rent	10	☑	Worse	

* 1=canoe/kayak, 2=fish, 3=pers. wtrcrft, 4=mtrboat, 5=sail, 6=swim/wade, 7=watch wldlf, 8=ski, 9=windsurf, 10=relaxing

Zooplankton Report

SYMKI1

Date 6/9/1998 Station: 2 11 mLs observed
Sample ID 20

Number of organisms measured: 69

Group	Percent
Cladoceran	39.1%
Copepod	60.9%
Other	

Group	Percent
Small < 1mm	87.0%
Large >= 1mm	13.0%
Ratio of large to Small:	0.15
Average size (mm):	0.52

Aquatic Plant Data

WILLIAM SYMINGTON

Sampler: Parsons, O'Neal Survey Date: 9/16/1998

Max depth of growth (M): 3

Comments Sunny, light breeze. Did habitat survey form for Kirk Smith. Dammed creek to create the lake. Most of the lake is shallow and filled with vegetation. Water tea colored, especially in channels. Plant growth dense in shallows, the shoreline is modified from what the map indicates.

SPECIES LIST

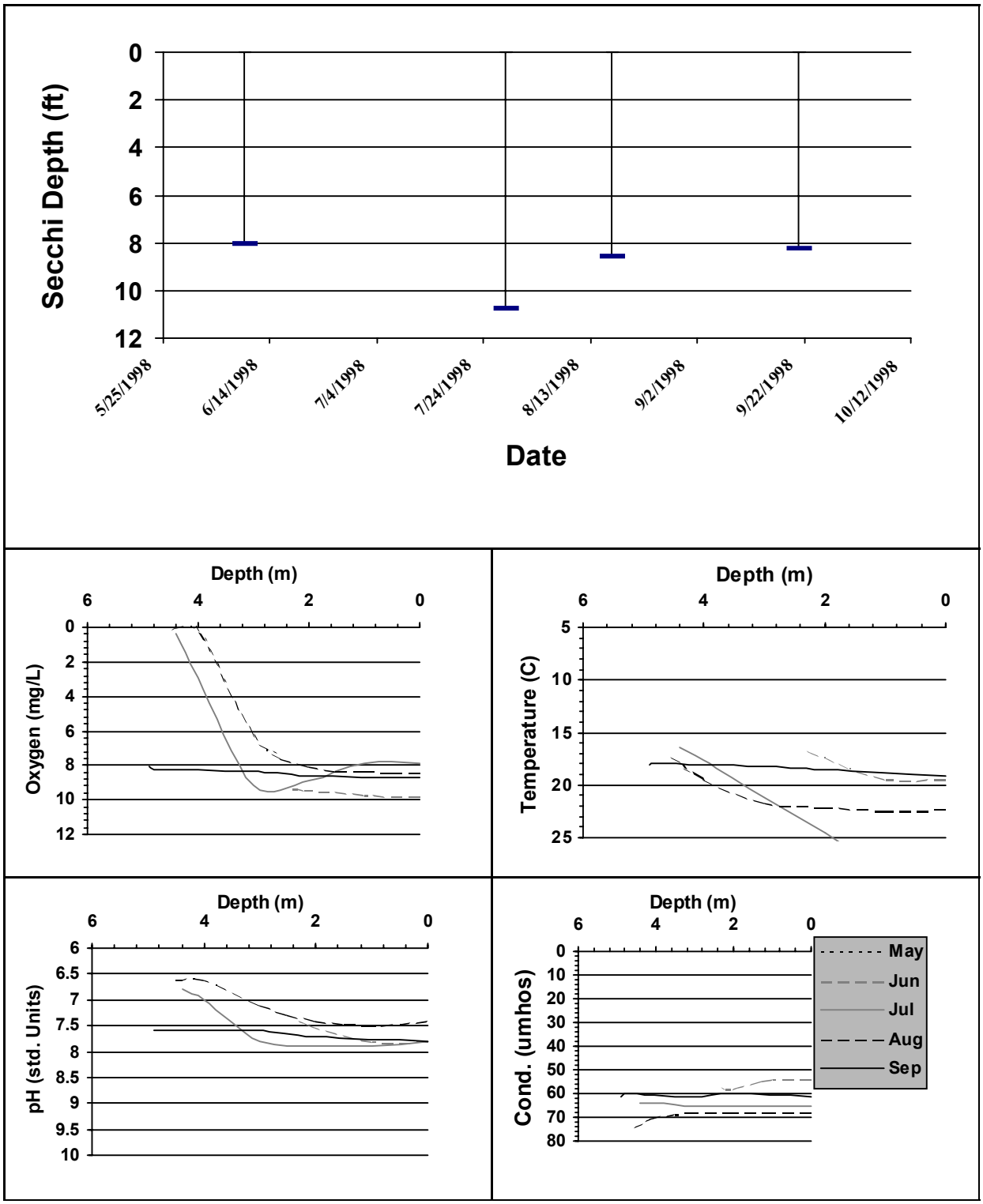
Scientific Name	Common Name	Dist [a]	Comments
Brasenia schreberi	watershield	3	
Elodea canadensis	common elodea	3	some dense patches
Najas flexilis	common naiad	2	

Nitella sp.	stonewort	3	a few species
Nuphar polysepala	spatter-dock, yellow water-lily	2	
Potamogeton amplifolius	large-leaf pondweed	3	some dense patches
Potamogeton epihydrus	ribbonleaf pondweed	2	
Potamogeton natans	floating leaf pondweed	2	
Potentilla palustris	purple (marsh) cinquefoil	2	
Potamogeton pusillus	slender pondweed	2	
Potamogeton zosteriformis	eel-grass pondweed	3	
Typha latifolia	common cat-tail	2	
unknown plant	unknown	2	at north end
Utricularia sp.	bladderwort	2	U. minor?

[a] 0 - value not recorded (plant may not be submersed)
1 - few plants in only 1 or a few locations
2 - few plants, but with a wide patchy distribution
3 - plants in large patches, codominant with other plants
4 - plants in nearly monospecific patches, dominant
5 - thick growth covering substrate to exclusion of other species

Secchi Depth and Profile Graphics

Station: 2 SYMKI1



Secchi Data and Field Observations

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Date	Time	Temp-erature (F)	Secchi (ft)	Color (1-greens, 11-browns	Bright-ness (pct)	Wind (1-none, 5-gusty)	Rainfall (0-none, 5-heavy)	Aesthetics (1-bad, 5-good)	Swimming (1-poor, 5-good)	Geese (#)	Waterfowl (besides geese #)	Boats-Fishing (#)	Boats-Skiing (#)
Station 2													
6/9/1998			8 B	7	100	2		4	1	40	6	0	0
	Sampler:	SMITH		Remarks:									
7/28/1998			10.73	8	0			4	3	0	0	0	0
	Sampler:	SMITH		Remarks:	SAMPLES TAKEN AT SITE#2 (DEEP SITE). MANY SWIMMERS. Fecal bacteria were samples collected at the two parks.								
8/17/1998			8.58	7	100	1		4	3	0	26	0	0
	Sampler:	SMITH		Remarks:	FECS TAKEN AT PARKS FEC#1 AT DIV 5 PARK, FEC #2 AT DIV 1-4 PARK.								
9/21/1998			8.25	6	0	1		5	4	12	56	0	0
	Sampler:	SMITH		Remarks:	FEC#1 TAKEN NEAR BEACH AREA IN COVE NORTH OR DAM. FEC#2 AT COMMUNITY PARK FOR DIV 1-4. The Conductivity and Oxygen result is qualified as an estimate due to postcalibration failing QA/QC requirements.								